2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons

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Multilateral nuclear supply principles of the Zangger Committee

Working paper submitted by Argentina, Australia, Austria, Belgium, Bulgaria, Canada, China, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Poland, Portugal, the Republic of Korea, Romania, the Russian Federation, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, the United Kingdom of Great Britain and Northern Ireland and the United States of America as members of the Zangger Committee

Introduction

1. Previous review conferences of the parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), when reviewing the implementation of the Treaty in the area of export controls, have repeatedly noted the role of the Zangger Committee. The Committee, also known as the "NPT Exporters Committee", essentially contributes to the interpretation of article III, paragraph 2, of the Treaty and thereby offers guidance to all parties to the Treaty. The Committee and its work were mentioned in final documents or in Committee reports of review conferences from 1975, 1985, 1990, 1995 and 2000.

2. The purpose of this paper is to describe the work of the Zangger Committee in order to provide better insight into the Committee's objectives. Furthermore, it is consistent with one of the calls of the 1995 Review and Extension Conference of the Parties to the Treaty, which in paragraph 17 of its decision on "Principles and objectives for nuclear non-proliferation and disarmament" stated that "transparency in nuclear export controls should be promoted within the framework of dialogue and cooperation among all interested States party to the Treaty".

3. Attached to this paper are the statements of previous NPT review conferences referring to the Zangger Committee.

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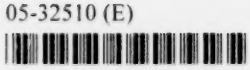

Zangger Committee

Article III, paragraph 2

4. Article III, paragraph 2 of the NPT performs a vital function in helping to ensure the peaceful use of nuclear material and equipment. Specifically, it provides:

> "Each State Party to the Treaty undertakes not to provide: (a) source or special fissionable material, or (b) equipment or material especially designed or prepared for the processing, use, or production of special fissionable material, to any non-nuclear-weapon State for peaceful purposes, unless the source or special fissionable material shall be subject to the safeguards required by this article."

5. The main significance of this paragraph is that parties to the Treaty should not export, directly or indirectly, nuclear material and equipment or material especially designed or prepared for the processing, use, or production of special fissionable material to non-nuclear-weapon States not parties to the NPT unless the export is subject to International Atomic Energy Agency (IAEA) safeguards as required by article III. This is an important provision because recipient countries not parties to the Treaty may not have accepted any other nuclear non-proliferation obligations. By interpreting and implementing article III, paragraph 2, the Zangger Committee helps to prevent the diversion of exported nuclear material and equipment or material from peaceful purposes to nuclear weapons or other nuclear explosive devices, which furthers the objectives of the Treaty and enhances the security of all States.

6. The Zangger Committee understandings, in line with article III, paragraph 2, also relate to exports to non-nuclear-weapon States parties to the Treaty insofar as the recipient should recognize the items on the trigger list as a basis for its export control decisions in the case of re-exports.

Zangger Committee understandings

7. Between 1971 and 1974 a group of 15 States — some already parties to the Treaty, others prospective parties — held a series of informal meetings in Vienna chaired by Professor Claude Zangger of Switzerland. As suppliers or potential suppliers of nuclear material and equipment, their objective was to reach a common understanding on:

(a) The definition of what constituted "equipment or material especially designed or prepared for the processing, use or production of special fissionable material" (as it was not defined anywhere in the Treaty);

(b) The conditions and procedures that would govern exports of such equipment or material in order to meet the obligations of article III, paragraph 2 on a basis of fair commercial competition.

8. The group, which came to be known as the Zangger Committee, decided that its status was informal and that its decisions would not be legally binding upon its members.

9. In 1972, the Committee reached consensus on basic "understandings" contained in two separate memorandums. Together, these memorandums form the guidelines of the Zangger Committee today. Each memorandum defines and provides for procedures for the export of materials and equipment described in article III, paragraph 2. The first memorandum concerns source and special fissionable material (article III, paragraph 2 (a)), the second, equipment and material especially designed or prepared for the processing, use or production of special fissionable material (article III, paragraph 2 (b)).

10. The consensus which formed the basis of the Committee's understandings was formally accepted by individual States members of the Committee by an exchange of notes among themselves. These amounted to unilateral declarations that the understandings would be given effect through respective domestic export control legislation. In parallel with this procedure, most member States wrote identical letters to the Director General of IAEA informing him of their decision to act in conformity with the conditions set out in the understandings. These letters also asked the Director General to communicate their decision to all States members of the Agency, which he did through an information circular dated 3 September 1974 (IAEA document INFCIRC/209).

11. Memorandum A defines the following categories of nuclear material:

(a) Source material: natural or depleted uranium and thorium;

(b) Special fissionable material: plutonium-239, uranium-233, uranium enriched in the isotopes 235 or 233.

12. Memorandum B, as clarified since 1974 (see paras. 16 and 17 below), contains plants, equipment and, as appropriate, material in the following categories: nuclear reactors, non-nuclear materials for reactors, reprocessing, fuel fabrication, uranium enrichment, heavy water production, and conversion.

13. To fulfil the requirements of article III, paragraph 2, the Zangger Committee understandings contain three basic conditions of supply for these items:

(a) For exports to a non-nuclear-weapon State not party to the Treaty, source or special fissionable material either directly transferred, or produced, processed, or used in the facility for which the transferred item is intended, shall not be diverted to nuclear weapons or other nuclear explosive devices;

(b) For exports to a non-nuclear-weapon State not party to the Treaty, such source or special fissionable material, as well as transferred equipment and non-nuclear material, shall be subject to safeguards under an agreement with the IAEA;

(c) Source or special fissionable material, and equipment and non-nuclear material shall not be re-exported to a non-nuclear-weapon State not party to the Treaty unless the recipient State accepts safeguards on the re-exported item.

Development of the conditions of supply

14. The Committee is holding discussions on possible amendments to its understandings during which it is considering a number of potential elements as conditions of supply, among which are: (a) full-scope safeguards; (b) the Additional Protocol; (c) physical protection as a condition of supply; and (d) "Supporting

Activities", containing commitments to, inter alia, (i) assist other States parties in establishing and implementing national rules and regulations on nuclear transfers, and (ii) support IAEA in its safeguards task in accordance with repeated calls by review conferences. The Committee would welcome the Conference's continued support for its efforts.

"Trigger list" and its clarification

15. The two memorandums (see paras. 9-12 above) became known as the "trigger list", since the export of listed items "triggers" IAEA safeguards. In other words, as described above, they will be exported only if (a) the transferred equipment or source or special fissionable material or (b) the material produced, processed or used in the facility for which the item is supplied, is subject to safeguards under an agreement with IAEA based on the IAEA safeguards system for NPT purposes.

16. Attached to the trigger list is an annex "clarifying", or defining, the equipment and material of memorandum B in some detail. The passage of time and successive developments in technology have meant that the Committee is periodically engaged in considering possible revisions to the trigger list, and the original annex has thus become increasingly detailed. To date, eight clarification exercises have taken place. Clarifications are conducted on the basis of consensus, using the same procedure followed in the adoption of the original understandings.

17. A summary of these clarifications reflects both some detail on the contents of the trigger list and an idea of the work of the Zangger Committee (dates are for publication of modifications and revisions of INFCIRC/209):

(a) In **December 1978**, the annex was updated to add heavy water production plants and equipment, and a few specific items of isotope separation equipment for uranium enrichment;

(b) In **February 1984**, further detail was added to the annex to take account of technological developments during the preceding decade in the area of uranium enrichment by the gas centrifuge process;

(c) In **August 1985**, a similar clarification was made to the annex section on irradiated fuel reprocessing;

(d) In **February 1990**, the uranium enrichment section was further elaborated by the identification of items of equipment used for isotope separation by the gaseous diffusion method;

(e) In **May 1992**, specific items of equipment were added to the section on heavy water production;

(f) In **April 1994**, the enrichment section of the annex was subject to its most significant expansion yet. Existing portions of the section were updated, and detailed lists of equipment were added for the enrichment processes of aerodynamic, chemical and ion exchange, laser-based plasma, and electromagnetic separation. A significant modification was also made to the entry for primary coolant pumps;

(g) In **May 1996**, the sections on reactors and reactor equipment, on non-nuclear materials, on the fabrication of fuel elements as well as on heavy water production were reviewed. Parts of these sections were updated and new, detailed equipment was added;

(h) In **March 2000**, a new section on uranium conversion was added. This section also contains elements transferred from section 3 (reprocessing).

All these changes to the list were included in the version of the Zangger Committee understandings published as IAEA document INFCIRC/209/Rev.2.

Membership

18. All Zangger Committee members are parties to the Treaty that are capable of supplying trigger list items. Currently there are 35 members (Argentina, Australia, Austria, Belgium, Bulgaria, Canada, China, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Luxembourg, Netherlands, Norway, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, United States). The Commission of the European Union attends the meetings as permanent observer. Any party that is an actual or potential nuclear supplier and is prepared to implement the Committee's understandings is eligible for membership. Decisions to invite new members of the Committee are taken by consensus of existing members. In the interest of strengthening the Treaty and the nuclear non-proliferation regime in general, Zangger Committee members have urged parties to the Treaty that are nuclear suppliers to consider seeking membership. NPT parties interested in doing so should visit the Committee's website (www.zanggercommittee.org) and may contact the Secretariat (the United Kingdom Mission in Vienna) or any State member of the Committee.

Outreach

19. Late in 2001, the Zangger Committee decided to launch an outreach programme between the Zangger Committee and third countries. The outreach programme has three objectives:

(a) To build a strong and sustainable relationship between the Zangger Committee and third countries;

(b) To increase the transparency of the activities of the Committee by explaining its role, purpose and functions, in particular its role as technical interpreter of article III, paragraph 2 of the Treaty;

(c) To provide opportunities for open dialogue on issues of common interest and concern on non-proliferation and nuclear export controls.

In conducting this exercise, the Zangger Committee wishes to underline that (a) the outreach programme reflects the fact that the Committee is a technical body with a remit to interpret article III, paragraph 2 of the Treaty and as such outreach will not be a political dialogue; (b) the programme is restricted to States parties to the Treaty; and (c) the programme is informal.

Subjects for discussion include:

- The role and purpose of the Zangger Committee
- The trigger list and its clarification
- Conditions of supply
- Membership of the Committee
- The Committee and NPT conferences.

Zangger Committee and NPT conferences

20. At the first NPT Review Conference in 1975, a brief paragraph in the Final Document referenced the work of the Zangger Committee without naming it. Paraphrasing, this paragraph stated that, with regard to implementation of article III, paragraph 2, the Conference noted that a number of nuclear suppliers had adopted certain minimum requirements for IAEA safeguards in connection with their nuclear exports to non-NPT non-nuclear-weapon States. The Conference went on to attach particular importance to the fact that those suppliers had established as a supply condition an undertaking of non-diversion to nuclear weapons.

21. In 1980, the Review Conference produced no consensus final document. However, in 1985, the Final Document contained a short reference to the Committee's activities, again without naming it. This time the Conference in effect endorsed the main activity of the Zangger Committee by indicating that further improvement of the trigger list should take account of advances in technology.

22. In 1990 the Zangger Committee was mentioned by name and the Conference provided a brief description of its aims and practices. While the Conference did not adopt a final declaration, Main Committee II agreed on language pertaining to a number of ideas and proposals concerning the implementation of the Treaty in the areas of the non-proliferation of nuclear weapons and safeguards. Main Committee II observed that Zangger Committee members had met regularly to coordinate the implementation of article III, paragraph 2 and had adopted nuclear supply requirements and a trigger list. It recommended that this list be reviewed periodically to take into account advances in technology and changes in procurement practices, a recommendation that the Zangger Committee has continued to pursue. Main Committee II also urged all States to adopt the Zangger Committee's requirements for any nuclear cooperation with a non-nuclear-weapon State not party to the Treaty.

23. At the 1995 NPT Review and Extension Conference, the work of the Zangger Committee was also referenced in Main Committee II and, more specifically, in the working group established by Main Committee II to consider export control issues. While the Conference did not adopt a final declaration similar to those of previous conferences, a consensus text on the Zangger Committee was attained. (The unofficial text emerging from this exercise was subsequently published in IAEA document INFCIRC/482 for information purposes.) The working group noted that a number of States suppliers had formed an informal group known as the Zangger Committee and had adopted certain understandings. It invited States to consider applying those understandings and recommended that the list of items and the procedures for implementation be reviewed from time to time. The working group

further noted that the application by all States of the understandings of the Zangger Committee would contribute to the strengthening of the non-proliferation regime. At the same time it called for international consultations among all interested States.

24. The Conference approved, inter alia, decision 2, which contains a set of principles and objectives, and decision 3, which provides the basis for the adopted "Enhanced Review Mechanism" of the implementation of the Treaty.

25. Decision 2 contains several principles of particular relevance to the work of the Zangger Committee, in the fields of safeguards and export controls (see annex II to this paper, principles 9 to 13). In particular, principle 17 calls upon all States to promote transparency in nuclear-related export controls through cooperation and dialogue. Members of the Committee have worked to promote transparency through international seminars and other forms of dialogue.

26. At the 2000 Review Conference, export control issues were discussed by an informal, open-ended working group established by Main Committee II. The working group did not reach final agreement on a text mentioning the Zangger Committee. In the end, only two paragraphs of the Final Document referenced indirectly the work of the Zangger Committee without naming it: the Conference recommended that the list of items triggering IAEA safeguards and the procedures for implementation be reviewed from time to time, and it requested that any supplier arrangement should be transparent.

27. The statements of review conferences on the Zangger Committee are attached as annex I to this working paper.

Annex I

References to Zangger Committee activities in NPT Review Conference documents

First NPT Review Conference (1975)

A paragraph in the Final Document referenced the work of the Zangger Committee without naming it:

> "With regard to the implementation of article III (2) of the Treaty, the Conference notes that a number of states suppliers of material or equipment have adopted certain minimum, standard requirements for IAEA safeguards in connection with their exports of certain such items to non-nuclear-weapon states not party to the Treaty (IAEA document INFCIRC/209 and addenda). The Conference attaches particular importance to the condition, established by those states, of an undertaking of non-diversion to nuclear weapons or other nuclear explosive devices, as included in the said requirements" (NPT/CONF.35/I, annex I, p. 3).

Third NPT Review Conference (1985)

The 1980 NPT Review Conference produced no final document, but the 1985 Final Document contained a reference to the Committee without naming it:

> "The Conference believes that further improvement of the list of materials and equipment which, in accordance with article III (2) of the Treaty, calls for the application of IAEA safeguards should take account of advances in technology" (NPT/CONF.III/64/I, annex I, p. 5, para. 13).

Fourth NPT Review Conference (1990)

While the Conference did not adopt a final document, Main Committee II did agree on a number of ideas and proposals, including the following language on the Zangger Committee:

> "The Conference notes that a number of States parties engaged in the supply of nuclear material and equipment have met regularly as an informal group which has become known as the Zangger Committee in order to coordinate their implementation of article III, paragraph 2. To this end, these states have adopted certain requirements, including a list of items triggering IAEA safeguards, for their export to non-nuclear-weapon States not party to the treaty, as set forth in the IAEA document INFCIRC/209 as revised. The Conference urges all States to adopt these requirements in connection with any nuclear cooperation with non-nuclear-weapon states not party to the Treaty. The Conference recommends that the list of items triggering IAEA safeguards and the procedures for implementation be reviewed from time to time to take into account advances in technology and changes in procurement practices. The Conference recommends the States parties to consider further ways to improve the measures to prevent diversion of nuclear technology for nuclear

weapons, other nuclear explosive purposes or nuclear weapon capabilities. While recognizing the efforts of the Zangger Committee in the non-proliferation regime, the Conference also notes that items included in the 'trigger list' are essential in the development of nuclear energy programmes for peaceful uses. In this regard, the Conference requests that the Zangger Committee should continue to take appropriate measures to ensure that the export requirements laid down by it do not hamper the acquisition of such items by states parties for the development of nuclear energy for peaceful uses" (NPT/CONF.IV/DC/1/Add.3 (a), p. 5, para. 27).

NPT Review and Extension Conference (1995)

While the Conference did not adopt a final declaration similar to those of previous conferences, Main Committee II and its subsequent working group did agree on a number of ideas and proposals, including the following language on the Zangger Committee, which reached informal consensus in the working group of Main Committee II and was separately published in IAEA document INFCIRC/482:

"The Conference notes that a number of States Parties engaged in the supply of nuclear material and equipment have met regularly as an informal group known as the Zangger Committee. These States have adopted certain understandings, including a list of items triggering IAEA safeguards, for their export to non-nuclear-weapon States not parties to the Treaty, as set forth in IAEA document INFCIRC/209, as amended. The Conference invites all States to consider applying these understandings of the Zangger Committee in connection with any nuclear cooperation with non-nuclear-weapon States not parties to the Treaty. The Conference recommends that the list of items triggering IAEA safeguards and the procedures for implementation be reviewed from time to time to take into account advances in technology and changes in procurement practices."

"The Conference notes that the application by all States of the understandings of the Zangger Committee would contribute to the strengthening of the non-proliferation regime. The Conference calls for wider participation in international consultations among all interested States parties concerning the formulation and review of such guidelines, which relate to the implementation of States parties obligations under article III, paragraph 2" (INFCIRC/482, attachment, paras. 5 and 7).

The Conference adopted in decision 2 a number of principles and objectives related to safeguards and export controls, which are reproduced in annex II below.

Sixth NPT Review Conference (2000)

Main Committee II and its working group discussed a number of ideas and proposals, including the following language on the Zangger Committee, without reaching final agreement:

"The Conference notes that a number of States parties engaged in the supply of nuclear material and equipment have met regularly as an informal group known as the Zangger Committee, in order to coordinate their

implementation of article III, paragraph 2 of the Treaty. To this end, these States have adopted certain understandings, including a list of items triggering IAEA safeguards, for their export to non-nuclear-weapon States not parties to the Treaty, as set forth in IAEA document INFCIRC/209 as amended. The Conference invites all States to adopt the understandings of the Zangger Committee in connection with any nuclear cooperation with non-nuclear-weapon States not parties to the Treaty."

In the Final Document, two paragraphs referenced indirectly the work of the Zangger Committee without naming it:

"52. The Conference recommends that the list of items triggering IAEA safeguards and the procedures for implementation, in accordance with article III (2), be reviewed from time to time to take into account advances in technology, the proliferation sensitivity, and changes in procurement practices.

"53. The Conference requests that any supplier arrangement should be transparent and should continue to take appropriate measures to ensure that the export guidelines formulated by them do not hamper the development of nuclear energy for peaceful uses by States parties, in conformity with articles I, II, III, and IV of the Treaty."

Annex II

Principles and objectives related to safeguards and export controls, as contained in decision 2 of the 1995 NPT Review and Extension Conference

Safeguards

9. The International Atomic Energy Agency is the competent authority responsible to verify and assure, in accordance with the statute of the Agency and the Agency's safeguards system, compliance with its safeguards agreements with States parties undertaken in fulfilment of their obligations under article III, paragraph 1, of the Treaty, with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices. Nothing should be done to undermine the authority of the International Atomic Energy Agency in this regard. States parties that have concerns regarding non-compliance with the safeguards agreements of the Treaty by the States parties should direct such concerns, along with supporting evidence and information, to the Agency to consider, investigate, draw conclusions and decide on necessary actions in accordance with its mandate.

10. All States parties required by article III of the Treaty to sign and bring into force comprehensive safeguards agreements and which have not yet done so should do so without delay.

11. International Atomic Energy Agency safeguards should be regularly assessed and evaluated. Decisions adopted by its Board of Governors aimed at further strengthening the effectiveness of Agency safeguards should be supported and implemented and the Agency's capability to detect undeclared nuclear activities should be increased. Also, States not party to the Treaty on the Non-Proliferation of Nuclear Weapons should be urged to enter into comprehensive safeguards agreements with the Agency.

12. New supply arrangements for the transfer of source or special fissionable material or equipment or material especially designed or prepared for the processing, use or production of special fissionable material to non-nuclear-weapon States should require, as a necessary precondition, acceptance of the Agency's full-scope safeguards and internationally legally binding commitments not to acquire nuclear weapons or other nuclear explosive devices.

13. Nuclear fissile material transferred from military use to peaceful nuclear activities should, as soon as practicable, be placed under Agency safeguards in the framework of the voluntary safeguards agreements in place with the nuclear-weapon States. Safeguards should be universally applied once the complete elimination of nuclear weapons has been achieved.